UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,747	08/30/2001	Charles Scott Graham	AUS920010489US1	9986

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ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>6/6/2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-30 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made to
> a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

2.   Claims 1-4, 10-14, 20-24, and 30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Spinney in view of Collier.

Regarding claim 1, receiving a data packet having a header which one or more

Internet Protocol filter values are identified is disclosed in Spinney, column 1, lines 35-

36 (disclosing a packet network using Ethernet, which uses IP) and column 14, lines 33-

34 (disclosing filtering packets). Identifying a destination based on the one or more filter

values in the header the data packet; and routing the data packet the identified

destination is disclosed in column 2, lines 15-18 (disclosing routing packets by local

address values, which are contained in the header). The destination being a queue pair

in a plurality of queue pairs supported by a single channel adapter is missing from

Spinney. However, Collier discloses in column 3, lines 15-17, a channel adapter

supporting multiple queue pairs, and in column 3,lines 26-28, routing packets via the

multiple queue pairs. It would have been obvious to one skilled in the art at the time of

the invention to route the filtered packets of Spinney through the Infiniband adapter of Collier. The motivation would be to use the Infiniband architecture to connect multiple independent processor platforms (See Collier, column 2, lines 59-62).

Regarding claim 11, a computer program product in a computer readable medium for routing data packets is disclosed in Spinney, column 1, lines 39-40 (disclosing that the system is implemented in a computer system). First instructions for receiving a data packet having a header in which one or more IP filter values are identified is disclosed in Spinney, column 1, lines 35-36 (disclosing a packet network using Ethernet, which uses IP) and column 14, lines 33-34 (disclosing filtering packets). Second instructions for identifying a destination based on the one or more filter values in the header of the data packet, and third instructions for routing the data packet to the identified destination is disclosed in column 2, lines 15-18 (disclosing routing packets by local address values, which are contained in the header). The destination being a queue pair in a plurality of queue pairs supported by a single channel adapter is missing from Spinney. However, Collier discloses in column 3, lines 15-17, a channel adapter supporting multiple queue pairs, and in column 3,lines 26-28, routing packets via the multiple queue pairs. It would have been obvious to one skilled in the art at the time of the invention to route the filtered packets of Spinney through the Infiniband adapter of Collier. The motivation would be to use the Infiniband architecture to connect multiple independent processor platforms (See Collier, column 2, lines 59-62).

Regarding claim 21, means for receiving a data packet having a header which one or more IP filter values are identified is disclosed in Spinney, column 1, lines 35-36

(disclosing a packet network using Ethernet, which uses IP) and column 14, lines 33-34

(disclosing filtering packets). Means for identifying a destination based on the one or

more filter values in the header the data packet; and means for routing the data packet

the identified destination is disclosed in column 2, lines 15-18 (disclosing routing

packets by local address values, which are contained in the header). The destination

being a queue pair in a plurality of queue pairs supported by a single channel adapter is

missing from Spinney. However, Collier discloses in column 3, lines 15-17, a channel

adapter supporting multiple queue pairs, and in column 3,lines 26-28, routing packets

via the multiple queue pairs. It would have been obvious to one skilled in the art at the

time of the invention to route the filtered packets of Spinney through the Infiniband

adapter of Collier. The motivation would be to use the Infiniband architecture to connect

multiple independent processor platforms (See Collier, column 2, lines 59-62).

Regarding claims 2, 12, and 22, generating a hash value based on the one or

more IP values; and retrieving a hash table entry based on the hash value is disclosed

in Spinney, column 14, lines 5-15 (disclosing using a hash table in a network).

Regarding claims 3, 13, and 23, determining if a collision bit in the hash table

entry is set; and retrieving a collision table entry corresponding the hash table entry if

the collision bit is set is disclosed in column 14, lines 27-29.

Regarding claims 4, 14, and 24, comparing the one more IP filter values in the

header of the data packet to filter values the in the collision table entry; identifying the

queue pair based on the comparison of the one or more IP filter values in the header of

the data packet to filter values in the collision table entry is disclosed in column 14, lines

27-36 (disclosing comparing addresses to a collision table).

Regarding claims 10, 20, and 30, identifying a queue pair in a plurality of queue

pairs based on the one or more IP filter values in the header of the data packet includes

using a content addressable memory is disclosed in Spinney, column 14, line 29.

3.   Claims 5-9, 15-19, and 25-29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Spinney in view of Collier in further view of Acharya.

Regarding claims 5, 15, and 25, being implemented in a host channel adapter set

up to support filtering is missing from Spinney. However, filtering packets in a network

is disclosed in Spinney, column 14, lines 33-34 (disclosing filtering packets). Also,

Acharya discloses in column 1, lines 59-63, that an HCA is merely a network interface.

It would have been obvious to one skilled in the art at the time of the invention to set up

the HCA to support filtering. The motivation would be to filter packets in the network.

Regarding claims 6, 16, and 26, the host channel adapter being set up to support

filtering by using a Modify HCA verb to enable filtering in the host channel adapter is

missing from Spinney. However, Acharya discloses in column 1, line 67-column 2, line

6, that verbs are how HCA's in InfiniBand customarily communicate with resources on

the network. It would have been obvious to one skilled in the art at the time of the

invention to use a Modify HCA verb to enable filtering in the invention of Spinney. The

motivation would be to use a built-in InfiniBand command.

Regarding claims 7, 17, and 27, the queue pair is a queue pair that is set up to

support filtering by using a Modify QP verb to enable filtering is missing from Spinney.

However, Acharya discloses in column 1, line 67-column 2, line 6, that verbs are how HCA's in InfiniBand customarily communicate with resources on the network. It would have been obvious to one skilled in the art at the time of the invention to use a Modify QP verb to enable filtering in the invention of Spinney. The motivation would be to use a built-in InfiniBand command.

Regarding claims 8, 18, and 28, the Modify QP verb identifies the filter value for each filter value for each filter type enabled from filter types supported by a corresponding host channel adapter is missing from Spinney. However, identifying filter types is disclosed in Spinney, column 14, lines 33-34. Also, Acharya discloses in column 1, line 67-column 2, line 6, that verbs are how HCA's in InfiniBand customarily communicate with resources on the network. It would have been obvious to one skilled in the art at the time of the invention to use a Modify QP verb to identify filter values in the invention of Spinney. The motivation would be to use a built-in InfiniBand command.

Regarding claims 9, 19, and 29, the one or more filter values are Internet Protocol over InfiniBand transport and/or network layer filter values is missing from Spinney. However, Acharya discloses in column 1, lines 41-48, a network using InfiniBand and TCP/IP. It would have been obvious to one skilled in the art at the time of the invention to use IP over InfiniBand in the filtering system of Spinney. The motivation would be to use a particular type of commercially available network.

Conclusion

4.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-

3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

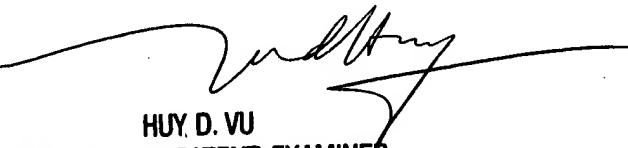organization where this application or proceeding is assigned is 703-872-9306.

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Business Center (EBC) at 866-217-9197 (toll-free).

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HUY, D. VU

SUPERVISORY PATENT EXAMINER

TECHNOLOGY CENTER 2600